

Montana Board of Oil and Gas Conservation Environmental Assessment

Proposed Action: Approve Drilling Permit (Form 22)

Operator: Cardinal Oil, LLC.

Well Name/Number: Galt No. 1-14-9-34

Location: NE NE Section 14 T9N R34E

County: Rosebud, **MT; Field (or Wildcat)** W/C

Air Quality

(possible concerns)

Long drilling time: No, 2 to 3 days drilling time.

Unusually deep drilling (high horsepower rig): No, a small single derrick drilling to drill to 1300'TVD.

Possible H2S gas production: None anticipated.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using single derrick drilling rig to drill to 1300'TVD.

Water Quality

(possible concerns)

Salt/oil based mud: No, freshwater and freshwater mud system on surface hole and mainhole to be drilled with air and/or air mist.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral drainage to Middle Fork Froze to Death Creek, about 1/10th of a mile to the northwest of this location. Middle Fork Froze to Death Creek is located about ½ of a mile to the east.

Water well contamination: No, -no water wells in area. Well will be drilled with freshwater and freshwater muds. Surface casing will be run and cemented to surface from 650'. Well will be air drilled from there to 1300' TD. If productive 4 ½" casing will be run and cemented.

Porous/permeable soils: No, very bentonitic "gumbo" soils.

Class I stream drainage: No

Mitigation:

☐ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 650' of surface casing cemented to surface adequate to protect freshwater zones.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossings,

High erosion potential: None to very little dirt work required, will be using a self leveling drilling rig.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, small location of 200'X200' size required.

Damage to improvements: Slight, surface use is grazing land.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other

Comments: Will use existing county roads and existing ranch trails. About 0.2 miles of new access road will be built from the existing ranch trail into this location.

Cuttings will be buried in the unlined earthen pit. Fluids will be allowed to dry in the pit. Pit will be backfilled when dry. No special concern.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest buildings are in Ingomar, Montana about 2 miles to the northeast of this location.

Possibility of H2S: None anticipated.

Size of rig/length of drilling time: Single derrick drilling rig/short 2 to 3 days drilling time

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

Comments: No concerns

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Threatened or endangered species listed for Rosebud County are the Black-Footed Ferret, Interior Least Tern, Pallid Sturgeon, and

Red Knot. Candidate species are the Sprague's Pipit and Greater-Sage Grouse. The Montana Natural Heritage Program website lists six (6) Species of concern; they are the Black-tailed Prairie Dog, Hoary Bat, Little Brown Myotis, Greater Sage-Grouse, Mountain Plover, and Long-billed Curlew.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: On private land. Access to surface lands is controlled by the private surface owners. No concerns

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: On private surface lands. Access to surface lands is controlled by the private surface owners. No concerns.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns.

Remarks or Special Concerns for this site

Well is a 1300' TVD Eagle Formation test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected, some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): John Gizicki
(title:) Compliance Specialist
Date: June 29, 2015

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Water wells in Rosebud County
(subject discussed)
June 29, 2015
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Rosebud County
(subject discussed)

June 29, 2015
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T9N R34E
(subject discussed)

June 29, 2015
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 14 T9N R34E
(subject discussed)

June 29, 2015
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____